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NO. 918 P. 7/34

PATENT COOPERATION TREATY
PCT
INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY
 (Chapter II of the Patent Cooperation Treaty)
 (PCT Article 36 and Rule 70)

Applicant's or agent's file reference P210597PCT		FOR FURTHER ACTION See Form PCT/PE/A/16	
International application No. PCT/NL2004/000759	International filing date (day/month/year) 29.10.2004	Priority date (day/month/year) 30.10.2003	
International Patent Classification (IPC) or national classification and IPC A23L1/221, A23L1/227, A23L1/228, A23L1/229, A23L1/236, A23L1/22			
Applicant QUEST INTERNATIONAL B.V.			
<p>1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.</p> <p>2. This REPORT consists of a total of 9 sheets, including this cover sheet.</p> <p>3. This report is also accompanied by ANNEXES, comprising:</p> <p style="margin-left: 20px;">a. <input checked="" type="checkbox"/> sent to the applicant and to the International Bureau a total of 2 sheets, as follows:</p> <p style="margin-left: 40px;"><input checked="" type="checkbox"/> sheets of the description, claims and/or drawings which have been amended and are the basis of this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 807 of the Administrative Instructions).</p> <p style="margin-left: 40px;"><input type="checkbox"/> sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in Item 4 of Box No. I and the Supplemental Box.</p> <p style="margin-left: 20px;">b. <input type="checkbox"/> (sent to the International Bureau only) a total of (indicate type and number of electronic carrier(s)) containing a sequence listing and/or tables related thereto, in computer readable form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).</p>			
<p>4. This report contains indications relating to the following items:</p> <p style="margin-left: 20px;"><input checked="" type="checkbox"/> Box No. I Basis of the opinion</p> <p style="margin-left: 20px;"><input type="checkbox"/> Box No. II Priority</p> <p style="margin-left: 20px;"><input checked="" type="checkbox"/> Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability</p> <p style="margin-left: 20px;"><input checked="" type="checkbox"/> Box No. IV Lack of unity of invention</p> <p style="margin-left: 20px;"><input checked="" type="checkbox"/> Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</p> <p style="margin-left: 20px;"><input type="checkbox"/> Box No. VI Certain documents cited</p> <p style="margin-left: 20px;"><input checked="" type="checkbox"/> Box No. VII Certain defects in the international application</p> <p style="margin-left: 20px;"><input type="checkbox"/> Box No. VIII Certain observations on the international application</p>			
Date of submission of the demand 17.10.2005		Date of completion of this report 21.12.2005	
Name and mailing address of the international preliminary examining authority:  European Patent Office D-80298 Munich Tel. +49 89 2399 - 0 Tx: 529656 apmu d Fax: +49 89 2399 - 4465		Authorized Officer Georgopoulos, N Telephone No. +49 89 2399-2634 	

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Box No. 1 Basis of the report

1. With regard to the language, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.

- ☐ This report is based on translations from the original language into the following language which is the language of a translation furnished for the purposes of:

- ☐ international search (under Rules 12.3 and 23.1(b))
☐ publication of the international application (under Rule 12.4)
☐ international preliminary examination (under Rules 55.2 and/or 55.3)

2. With regard to the elements* of the international application, this report is based on (replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report):

Description, Pages

1-9 as originally filed

Claims, Numbers

1-15 received on 17.10.2005 with letter of 13.10.2005

- ☐ a sequence listing and/or any related table(s) - see Supplemental Box Relating to Sequence Listing

3. ☐ The amendments have resulted in the cancellation of:

- ☐ the description, pages
- ☐ the claims, Nos,
- ☐ the drawings, sheets/figs
- ☐ the sequence listing (*specify*):
- ☐ any table(s) related to sequence listing (*specify*):

4. ☐ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).

- ☐ the description, pages
- ☐ the claims, Nos.
- ☐ the drawings, sheets/figs
- ☐ the sequence listing (*specify*):
- ☐ any table(s) related to sequence listing (*specify*):

* If item 4 applies, some or all of these sheets may be marked "superseded."

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Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability

1. The questions whether the claimed invention appears to be novel, to involve an inventive step (to be non-obvious), or to be industrially applicable have not been examined in respect of:

- ☐ the entire international application,
- ☒ claims Nos. 11, 15
because:
 - ☐ the said international application, or the said claims Nos. relate to the following subject matter which does not require an international preliminary examination (specify):
 - ☐ the description, claims or drawings (*indicate particular elements below*) or said claims Nos. are so unclear that no meaningful opinion could be formed (*specify*):
 - ☐ the claims, or said claims Nos. are so inadequately supported by the description that no meaningful opinion could be formed.
 - ☒ no international search report has been established for the said claims Nos. 11, 15
 - ☐ the nucleotide and/or amino acid sequence listing does not comply with the standard provided for in Annex C of the Administrative Instructions in that:
 - the written form ☐ has not been furnished
 - ☐ does not comply with the standard
 - the computer readable form ☐ has not been furnished
 - ☐ does not comply with the standard
 - ☐ the tables related to the nucleotide and/or amino acid sequence listing, if in computer readable form only, do not comply with the technical requirements provided for in Annex C-bis of the Administrative Instructions.
- ☐ See separate sheet for further details

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Box No. IV Lack of unity of invention

1. ☐ In response to the invitation to restrict or pay additional fees, the applicant has:
 - ☐ restricted the claims.
 - ☐ paid additional fees.
 - ☐ paid additional fees under protest.
 - ☐ neither restricted nor paid additional fees.
2. ☒ This Authority found that the requirement of unity of invention is not complied with and chose, according to Rule 68.1, not to invite the applicant to restrict or pay additional fees.
3. This Authority considers that the requirement of unity of invention in accordance with Rules 13.1, 13.2 and 13.3 is
 - ☐ complied with.
 - ☒ not complied with for the following reasons:
see separate sheet
4. Consequently, this report has been established in respect of the following parts of the international application:
 - ☐ all parts.
 - ☒ the parts relating to claims Nos. 1-10, 12-14.

Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes: Claims	1-10, 12-14
	No: Claims	
Inventive step (IS)	Yes: Claims	1-10, 12-14
	No: Claims	
Industrial applicability (IA)	Yes: Claims	1-10, 12-14
	No: Claims	
2. Citations and explanations (Rule 70.7):
see separate sheet

Box No. VII Certain defects in the international application

The following defects in the form or contents of the international application have been noted:
see separate sheet

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Item I

- 1 The amendments filed with the letter dated 13.10.05 meet the requirements of Art.34 (2) (b) PCT.

Item III

- 2 The subject-matter of present claims 11 and 15 will not be examined, as no search report has been issued for said subject-matter (for the reasons, see Item IV below).

Item IV

- 3 The present application lacks unity. The separate inventions are:
- a/ first invention: present claims 1-10 and 12-14
 Flavouring composition containing at least 5 wt.% glycine hydrochloride. Method of flavouring a foodstuff or beverage using 0.01 - 2.0 wt.% of said flavouring composition. A water containing foodstuff or beverage containing at least 0.01 wt.% glycine hydrochloride and 0 - 0.01 wt.% turmeric.
- b/ second invention: present claim 11
 Use of glycine hydrochloride in water based foodstuffs or beverages to suppress and / or mask their sour taste.
- c/ third invention: present claim 15
 A process of manufacturing a flavouring composition, said process comprising dry blending of glycine hydrochloride and one flavouring agent.
- 4 The aforementioned inventions are not so linked as to form a single general inventive concept (Rule 13.1 PCT), for the following reasons:
- 4.1 In the first invention, the technical problem to be solved may be regarded as how to provide a flavouring composition which is used for preparing various flavoured foodstuffs and beverages that combine a low pH with a well balanced flavour and a surprisingly mild sour taste (see also page 2, lines 5-8 of the present description). Said technical problem is solved by the use of a specific glycine hydrochloride concentration range in the aforementioned flavouring composition (see also present claim 1). Said

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concentration range constitutes the Special Technical Feature (STF) in the first invention.

In the second invention, the technical problem to be solved is the provision of low pH foodstuffs and beverages with suppressed or masked sour taste. The STF, in this case, is the use of glycine hydrochloride. However, no specific concentration ranges are defined for glycine hydrochloride.

In the third invention, the technical problem to be solved appears to be merely the provision of a flavouring composition containing glycine hydrochloride. The STF is (again) the use of glycine hydrochloride without any further data on its concentration. Due to the fact that the aforementioned inventions:

- a/ do not have the same STF; and / or
 - b/ do not address the same technical problem,
- the present application lacks unity.

- 5 Only the subject-matter of the first invention (i.e. the subject-matter of present claims 1-10 and 12-14) was searched. Therefore, only this subject-matter will be examined.

Item V

- 6 Reference is made to the following documents:

D1: PATENT ABSTRACTS OF JAPAN, vol. 014, no. 466 (C-0768), 11 October 1990 (1990-10-11) & JP 02 190163 A (TAKUO SHIGA), 26 July 1990 (1990-07-26)

D2: EP-A-0 181 421

D3: US-A-3 806 608

D4: EP-A-0 582 036

D5: US-A-4 163 803

D6: US-A-5 432 160

- 7 The subject-matter of present independent claims 1, 6 and 12 is novel (Art. 33(2) PCT), as none of the documents D1-D6 discloses:
- a/ a glycine hydrochloride concentration range as in any one of present claims 1 or 6;
 - or
 - b/ a glycine hydrochloride concentration range as in present claim 12 (see D1, page 3,

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paragraph 3; examples 1-3, 7 and 10 of D2; column 2, lines 21-39; examples 1-12 of D3; page 2, lines 19-22; examples 1-5 of D4; column 1, lines 40-43; examples 1-4 of D5; and column 1, lines 46-48; table 1; example 1; claims 1, 4, 5 and 6 of D6).

8 The subject-matter of present independent claims 1, 6 and 12 would not be obvious to the person skilled in the art in regard of the combination [D1+D2+D4], for the following reasons:

8.1 D1 teaches that the final product (salt-like seasoning agent) has a salty taste (the mild sour taste mentioned in the present invention is not disclosed in said document). Moreover, said document does not disclose or suggest a content of at least 5% glycine hydrochloride: at best, only trace amounts of glycine hydrochloride should be present in said seasoning agent, since the glycine hydrochloride is reacted with calcium carbonate. D2 discloses histidine hydrochloride and lysine hydrochloride (see, e.g. example 3 of D2). However, the presence of those substances in the flavour enhancing seasoning of said document is not connected to a technical effect or advantage (see also page 2, paragraph 3 - page 3, paragraph 2 of D2).

Finally, D4 does not mention glycine hydrochloride but L-lysine monohydrochloride instead (see examples 1-5 of said document). However, said L-lysine monohydrochloride is reacted with L-lysine monohydrate and succinic acid so that the final salt is obtained (see, e.g. example 1 of D4).

Therefore, the person skilled in the art would not have an indication from the combination [D1+D2+D4] to use glycine hydrochloride at the levels according to the present invention in order to obtain a flavouring composition with a well balanced flavour and a surprisingly mild sour taste (see also page 2, lines 3-8 of the present description).

9 The subject-matter of present independent claims 1, 6 and 12 would not be obvious to the person skilled in the art in regard of the combination [D1+D3+D5], for the following reasons:

9.1 D1 teaches that the final product (salt-like seasoning agent) has a salty taste (the mild sour taste mentioned in the present invention is not disclosed in said document). Moreover, said document does not disclose or suggest a content of at least 5% glycine hydrochloride: at best, only trace amounts of glycine hydrochloride should be present in

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said seasoning agent, since the glycine hydrochloride is reacted with calcium carbonate. D3 does not disclose glycine hydrochloride (it discloses the hydrochloric salts of L-cysteine, L-lysine and L-arginine, instead). Moreover, said salts are used for providing the flavour of whole chicken eggs to the final synthetic composition (see column 2, lines 21-29 of D3); the technical effect of providing a flavouring composition with a surprisingly mild sour taste is not mentioned in said document.

D5 discloses the incorporation of glycine hydrochloride in foods and beverages containing turmeric but not at the levels according to the present invention.

- 10 Finally, the subject-matter of present independent claims 1, 6 and 12 would not be obvious to the person skilled in the art in regard of the combination [D1+D3+D5] for the following reasons;

- 10.1 D1 teaches that the final product (salt-like seasoning agent) has a salty taste (the mild sour taste mentioned in the present invention is not disclosed in said document). Moreover, said document does not disclose or suggest a content of at least 5% glycine hydrochloride; at best, only trace amounts of glycine hydrochloride should be present in said seasoning agent, since the glycine hydrochloride is reacted with calcium carbonate. D5 discloses the incorporation of glycine hydrochloride in foods and beverages containing turmeric but not at the levels according to the present invention. Finally, D6 does not disclose or suggest the use of glycine hydrochloride as flavour-enhancing agent.

- 11 From the above, it can be concluded that the present application meets the criteria of Article 33 (1) PCT, because the subject matter of present independent claims 1, 6 and 12 involves an inventive step in the sense of Article 33 (3) PCT, in regard of any one of the document combinations [D1+D2+D4], [D1+D3+D5], [D1+D5+D6] (for the respective passages see section 7 above).

- 12 The subject-matter of present claims 1-10 and 12-14 is susceptible of industrial application in the field of food industry (Art.33 (4) PCT).

Item VII

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- 13 Contrary to the requirements of Rule 5.1(a)(ii) PCT, the relevant background art disclosed in the documents D1-D6 is not mentioned in the description, nor are these documents identified therein.

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CLAIMS

1. A flavouring composition containing at least 5%, preferably at least 10% by weight of dry matter of glycine hydrochloride, wherein, in case the composition contains a
 5 turmeric component selected from the group consisting of turmeric, and derivative of turmeric containing curcumin and combinations thereof, the weight ratio of turmeric component to glycine hydrochloride is less than 1:5, preferably less than 1:10.
- ~~2. Flavouring composition according to claim 1, wherein, in case the composition contains a~~
 10 ~~turmeric component selected from the group consisting of turmeric, and derivative of turmeric containing curcumin and combinations thereof, the weight ratio of turmeric component to glycine hydrochloride is less than 1:5, preferably less than 1:10.~~
- ~~3.2.~~ Flavouring composition according to claim 21, wherein, in case the composition
 15 contains a turmeric component, the turmeric component is present in a concentration of less than 2%, preferably less than 1% by weight of dry matter
- ~~4.3.~~ Flavouring composition according to any one of claims 1 or 2-3, wherein the
 20 composition contains less than 20 wt.% water, preferably less than 10 wt.% water
- ~~5.4.~~ Flavouring composition according to any one of claims 1-43, wherein the
 compositions is a free flowing powder.
- ~~6.5.~~ Flavouring composition according to any one of claims 1-54, wherein the composition
 25 further contains at least 10% by weight of dry matter of at least one component selected from the group consisting of yeast lysates, processed flavours and toppings
- ~~7.6.~~ A method of flavouring a foodstuff or a beverage, said method comprising
 30 incorporating into said foodstuff or beverage between 0.01 and 20 wt.% of a flavouring composition according to any one of the preceding claims.
- ~~8.7.~~ Method according to claim 76, wherein the flavouring composition is incorporated
 into the foodstuff or beverage in an amount effective to deliver at least 0.005% of glycine hydrochloride by weight of the foodstuff or beverage.

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9.8. Method according to claim 7-6 or 82, wherein the foodstuff or beverage contains at least 20 wt.%, preferably at least 40 wt.% water.

5 10.9. Method according to claim 98, wherein said water has a pH within the range of 2.0-5.0, preferably within the range of 3.0-4.5

10 11.10. Method of flavouring a foodstuff according to any one of claims 76-109, wherein the foodstuff is selected from the group consisting of sauces, soups, dressings and mayonnaise.

12.11. Use of glycine hydrochloride in water based low pH foodstuffs or beverages to suppress and/or mask the sour taste of such foodstuffs or beverages.

15 13.12. A water containing foodstuff or beverage with a pH of less than 4.5, wherein said foodstuff or beverage contains at least 0.01 wt.% glycine hydrochloride, between 0 and 0.01 wt.% turmeric, and wherein the weight ratio of glycine hydrochloride to turmeric exceeds 5.

20 14.13. A water containing foodstuff or beverage with a pH of less than 4.5, wherein said foodstuff or beverage contains at least 0.05 wt.% glycine hydrochloride.

15.14. The foodstuff or beverage according to claim 13-12 or 1413, wherein said foodstuff or beverage is water-continuous.

25

16.15. A process of manufacturing a flavouring composition, said process comprising any blending of glycine hydrochloride with at least one flavouring ingredient.

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